Air Quality Permitting
Statement of Basis

July 19, 2007

Permit to Construct No. P-060132

Spunstrand
Wallace, ID

Facility ID No. 079-00038

Prepared by:

Almer Casile, Permit Writer
AIR QUALITY DIVISION

PUBLIC COMMENT

Table of Contents

Acronyms, Units, and Chemical Nomenclatures

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gpm	gallons per minute
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
m	meter(s)
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NSPS	New Source Performance Standards
O_3	ozone
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
Rules	Rules for the Control of Air Pollution in Idaho
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor
SO_2	sulfur dioxide
SOx	sulfur oxides
T/yr	tons per year
$\mu g/m^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct.

2. FACILITY DESCRIPTION

Spunstrand manufactures reinforced duct work, pipes, tubing and tanks using a filament winding method.

3. FACILITY / AREA CLASSIFICATION

The facility is defined as a major facility in accordance with IDAPA 58.01.01.008.10 for Tier I permitting purposes because the facility has the potential to emit (PTE) HAP over 25/10 T/yr. The facility is not a Prevention of Significant Deterioration (PSD) major source, because emissions do not exceed the PSD threshold of 250 T/yr. The AIRS classification is "A" because potential emissions of HAPs exceed 10 for styrene and 25 T/yr for total HAPs.

The facility is located in Shoshone County, in Air Quality Control Region 62, and Zone 11. The area classification is unclassified for PM_{10}, CO, and all federal and state criteria air pollutants.

4. APPLICATION SCOPE

This proposed permitting action is required by a Consent Order, and establishes applicable requirements in accordance with IDAPA 58.01.01.200 and 40 CFR 63 Subpart WWWW, National Emissions Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production. This permitting action also establishes the facility as a major facility in accordance with IDAPA 58.01.01.008.10 for Tier I permitting purposes, because the facility has the potential to emit (PTE) HAP over 25/10 T/yr.

4.1 Application Chronology

February 10, 2003	DEQ received Tier I/PTC permit application.
April 11, 2003	Permit application deemed complete.
May 1, 2003	DEQ requested additional information.
February 5, 2004	DEQ received additional information.
March 22, 2006	DEQ requested additional information via e-mail.
June 23, 2006	DEQ received additional information.
June 23, 2006	DEQ requested additional information via e-mail.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action:

5.1 Equipment Listing

Five Winding Machines
Two Pulling Stations
Cutting Station
Chopper Station

5.2 Emissions Inventory

PM_{10} emissions are generated from cutting and trimming of product at the Main Building. These emissions are vented to the Dust Collection Cyclone. PM_{10} emissions listed in Table 5.1 represent controlled and allowable PTE. The facility has used a highly conservative emission factor of 0.1 gr/dscf, and a determined a daily emission rate of 14.4 lbs/day PM_{10}, or 0.6 lbs/hr PM_{10}. (A comparison of PM_{10} to a facility with larger fiberglass production demonstrated that the emissions were conservative.) The emission unit Fabrication is comprised of the facility's three work areas: Main Building, Mark 8 Building, & Warehouse. The emission unit has not been associated with any stack. Styrene and VOC emissions below represent uncontrolled and allowable PTE.

Table 5.1 EMISSIONS SUMMARY

Source	PM_{10}		VOC	Styrene	
	Lb/day	T/yr	T/yr	lb/hr	T/yr
Dust Collection Cyclone	14.4	2.6			
Fabrication			28.87	6.59	28.87

5.3 Modeling

Modeling was performed, because this permitting action results in an increase PM_{10} emissions. The screening analysis showed impacts that exceeded the 24 hour and annual averaging period's significant contribution levels of 5.0 and 1.0 $\mu g/m^3$, respectively. A PM_{10} facility wide impact analysis was performed, and the results are as follows:

Table 5.2 POINT SOURCE & BUILDING PARAMETERS

Building Height (ft)	Building Length (ft)	Building Width (ft)	Stack Height (ft)	Modeled Stack Diameter (ft)	Stack Gas Flow Temperature (F°)	Stack Gas Flow Velocity (ft/sec)
21.5	350	303	31	2.89	72	81.305

Table 5.3 FULL IMPACT ANALYSIS RESULTS

Pollutant	Averaging Period	Facility Ambient Impact ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Ambient concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of NAAQS
PM_{10}	24-hour	75.8	66	141.8	150	95
	Annual	11.9	21[a]	32.9	50	66

[a] The applicant presented a value of 19 ug/m^3 for the PM10 24-hour background concentration. The correct value is 21 ug/m^3, and is used in this table.

[b] The ambient ratio method (ARM) factor of 0.75 has been used to convert NOx results to NO2 per 40 CFR 51 Appendix W Guideline on Air Quality Models.

The emission estimates of PM_{10} were used as the emission rate inputs for the modeling analysis. Permit conditions have been established in the permit to assure that the cyclone operates as described in the application in order to assure compliance with the NAAQS. In accordance with IDAPA 58.01.01.210, no preconstruction compliance demonstration is necessary because the toxic air pollutant styrene is regulated by 40 CFR 63, Subpart WWWW.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.
IDAPA 58.01.01.201.....Permit to Construct Required

The facility's proposed project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

IDAPA 58.01.01.203.....Permit Requirements for New and Modified Stationary Sources

The applicant has shown to the satisfaction of DEQ that the facility will comply with all applicable emissions standards, ambient air quality standards, and toxic increments.

IDAPA 58.01.01.209.05.b.....Permit Requirements for New and Modified Stationary Sources

In accordance with the requirement, a proposed PTC and draft Tier I operating permit shall be prepared, and provided for public comment and affected states in accordance with Sections 209, 364, and 365 because the facility is a Tier I source that requires a permit to construct.

IDAPA 58.01.01.210.20.....Demonstration of Preconstruction Compliance with Toxic Standards

The applicant has demonstrated that the toxic air pollutant styrene is regulated by the Department at the time of permit issuance under 40 CFR Part 63, and therefore no further procedures for demonstrating preconstruction compliance will be required under Section 210 for the toxic air pollutants as part of the application process.

IDAPA 58.01.01.224.....Permit to Construct Application Fee

The applicant satisfied the PTC application fee requirement by submitting a fee of $1,000.00 at the time the original application was submitted, September 1, 2005.

IDAPA 58.01.01.225.....Permit to Construct Processing Fee

The total emissions from the proposed new facility are between 10and 100 T/yr; therefore, the associated processing fee is $5,000.00. No permit to construct can be issued without first paying the required processing fee.

40 CFR 63, Subpart WWWW.....National Emission Standards for Hazardous Air Pollutants for Reinforced Plastic Composites Production

This subpart establishes National Emissions Standards For Hazardous Air Pollutants (NESHAP) for reinforced plastic composites production. This subpart also establishes compliance options, operating requirements, and work practice requirements to demonstrate initial and continuous compliance with the Hazardous Air Pollutants (HAP) emissions standards for open molding, polymer casting, mixing, and cleaning of equipment procedures used in reinforced plastic composites manufacture. The requirements of this subpart apply to this facility, because the facility-wide HAP emissions of the facility exceed major source thresholds.

40 CFR 63.5785(a).....Am I subject to this subpart?

The requirements of this subpart apply to this facility because the facility owns or operates a reinforced plastic composites production facility that is located at a major source of HAP emissions.

40 CFR 63.5787 .....What if I also manufacture fiberglass boats or boat parts?

40 CFR 63.5787(a) applies because the source meets the applicability criteria in 40 CFR 63.5785, and is not subject to the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV). The requirements of 40 CFR 63.5785(b) through (d) do not apply because the facility is not subject to the Boat Manufacturing NESHAP (40 CFR part 63, subpart VVVV).

40 CFR 63.5790 .....What parts of my plant does this subpart cover?

In accordance with 40 CFR 63.5790(a), the facility is subject to this subpart because it is a new or existing facility. In accordance with 40 CFR 63.5790(b), the affected sources located at the facility are open molding, mixing, cleaning of equipment used in reinforced plastic composites manufacture, HAP-containing materials storage, and repair operations on parts the facility manufactures.

40 CFR 63.5795 .....How do I know if my reinforced plastic composites production facility is a new affected source or an existing affected source?

In accordance with 40 CFR 63.5795(a), the facility is an existing source because it began construction before August 2, 2001.

40 CFR 63.5796 .....What are the organic HAP emissions factor equations in Table 1 to this subpart, and how are they used in this subpart?

This section is informational.

40 CFR 63.5797 .....How do I determine the organic HAP content of my resins and gel coats?

In accordance with 40 CFR 63.5797, the permittee may rely on information provided by the material manufacturer, such as manufacturer's formulation data and material safety data sheets (MSDS), using the procedures specified in 40 CFR 63.5797(a) through (c).

40 CFR 63.5798 .....What if I want to use, or I manufacture, an application technology (new or existing) whose organic HAP emissions characteristics are not represented by the equations in Table 1 to this subpart?

This section does not apply to the permittee.

40 CFR 63.5799 .....How do I calculate my facility's organic HAP emissions on a tpy basis for purposes of determining which paragraphs of 40 CFR 63.5805 apply?

In accordance with 40 CFR 63.5799, the facility is an existing facility, and must use the procedures in either paragraph (b)(1) or (2) of 40 CFR 63.5799 to calculate the facility’s organic HAP emissions in tpy for purposes of determining which paragraphs in § 63.5805 apply to the facility. The permittee must also comply with the calculation and notification requirements of 40 CFR 63.5799(c).

40 CFR 63.5800 .....When do I have to comply with this subpart?

In accordance with 40 CFR 63.5800, the permittee must comply with the standards in this subpart by the dates specified in Table 2 to this subpart. For an existing source, the date specified in Table 2 is April 21, 2006. The permittee has organic HAP emissions standard based on a 12-month rolling average, and, therefore, must begin collecting data on the compliance date in order to demonstrate compliance.

40 CFR 63.5805 .....What standards must I meet to comply with this?

40 CFR 63.5805(a), (a)(1), and (a)(2) of (a) do not apply to the facility because it does not have any centrifugal casting or continuous casting/lamination operations. 40 CFR 63.5805(b) applies because the facility is an existing facility. 40 CFR 63.5805(c) does not apply because the facility is not an new facility. 40 CFR 63.5805(d)(1) and (d)(2) apply because the facility does not emit 100 tpy or more of HAP from the combination of all open molding, centrifugal casting, continuous lamination/casting, pultrusion, SMC manufacturing, mixing, and BMC manufacturing, and the facility does not manufacture reinforced plastic composites parts using open molding or pultrusion operations.

The facility is subject to 40 CFR 63.3805(g), which requires repair operations subject to this subpart as defined in 40 CFR 63.5785 to meet the requirements in Tables 3 and 4 to this subpart and are not required to meet the 95 percent organic HAP emissions reduction requirements in paragraph (a)(1) or (d) of 40 CFR 63.5805..

All work practice in Tables 4 apply except 1, 4, 5, and 9. The following operations occur at the facility which have emission limits in Tables 3:

- open molding CR/HS operations that use mechanical resin application
- open molding CR/HS operations that use filament application
- open molding CR/HS operations that use manual resin application
- open molding low flame spread/low-smoke product operations that use mechanical resin application
- open molding low flame spread/low-smoke product operations that use filament application
- open molding low flame spread/low-smoke product operations that use manual resin application
- open mold gel coat operations that use tooling gel coating
- open mold gel coat operations that use white/off white pigmented gel coating
- open mold gel coat operations that use all other pigmented gel coating

40 CFR 63.5810 .....What are my options for meeting the standards for open molding and centrifugal casting operations at new and existing sources?

The facility must use one of the methods in 40 CFR 63.5810 paragraphs (a) through (d) to meet the standards for open molding in Table 3 of this subpart.

40 CFR 63.5820 .....What are my options for meeting the standards for continuous lamination/casting operations?

Paragraphs (a) through (d) of this section do not apply to the facility because the facility has open molding operations, and is not subject to the standards continuous lamination/casting operations.

40 CFR 63.5830 .....What are my options for meeting the standards for pultrusion operations subject to the 60 weight percent organic HAP emissions reductions requirement?

40 CFR 63.5830 and paragraphs (a) through (d) of the section do not apply to the facility because the facility has open molding operations, and is not subject to the standards for pultrusion operations subject to the 60 weight percent organic HAP emissions reductions requirement.

40 CFR 63.5835 .....What are my general requirements for complying with this subpart?

Paragraph (a) of this section applies to the facility and requires the facility to be in compliance at all times with the work practice standards in Table 4 and the organic HAP emissions limits in Table 3. Paragraph (b) of this section does not because the facility does not use add-on controls. Paragraphs (c) and (d) of 40 CFR 63.5835 generally apply to all facilities subject to 40 CFR 63, Subpart WWWW.

40 CFR 63.5840 .....By what date must I conduct a performance test or other initial compliance demonstration?

The facility must comply with the data collection and compliance demonstration requirements of this paragraph by the compliance date specified by 40 CFR 63.5800. Because the facility is an open molding operation that elected to meet a organic HAP emissions limit on a 12-month rolling average, the facility must initiate collection of the required data on the compliance date, and demonstrate compliance 1 year after the compliance date.

40 CFR 63.5845 .....When must I conduct subsequent performance tests?

This section does not apply to the permittee because it does not operate an add-on control device to meet a standard.

40 CFR 63.5850 .....How do I conduct performance tests, performance evaluations, and design evaluations?

This section does not apply to the permittee because these requirements apply to facilities that operate an add-on control device to meet a standard.

40 CFR 63.5855 .....What are my monitor installation and operation requirements?

This section does not apply to the permittee because these requirements apply to facilities that operate an add-on control device to meet a standard.

40 CFR 63.5860 .....How do I demonstrate initial compliance with the standards?

Paragraph (a) of this section applies to the facility and requires the facility demonstrate initial compliance with each applicable organic HAP emissions standard in 40 CFR 63.5805 paragraphs (a) through (h) by using the procedures shown in Tables 8 and 9 of this subpart . Specifically, only item 1 of Table 8 applies, and items 2, 3, and 8 of Table 9 apply. Paragraph (b) of this section does not apply to the permittee because these requirements apply to facilities that operate an add-on control device to meet a standard.

40 CFR 63.5865-5890 .....What data must I generate to demonstrate compliance with the standards for continuous lamination/casting operations?

This section does not apply to the permittee because these requirements apply to facilities that have continuous lamination/casting operations. The facility has open molding operations.

40 CFR 63.5895 .....How do I monitor and collect data to demonstrate continuous compliance?

Paragraph (a) of this section does not apply to the permittee because this requirement applies to facilities that operate an add-on control device to meet a standard. Paragraphs (b), (b)(1) through (b)(3), (c) and (d) of this section apply. Paragraph (e) of this section does not apply to the permittee because this requirement applies to facilities that operate pultrusion machines.

40 CFR 63.5900 .....How do I demonstrate continuous compliance with the standards?

Paragraph (a)(1) and (d) of this section do not apply to the permittee because these requirements apply to facilities that operate an add-on control device to meet a standard. Paragraphs (a)(2) through (a)(4), (b), (c) and (e) of this section apply.

40 CFR 63.5905 .....What notifications must I submit and when?

Paragraphs (a) and (b) of this section apply. Although the facility is a new source, because at least part of the facility was under construction prior to August 2, 2001, the facility is subject to the initial notification requirements for existing sources under Table 13.

40 CFR 63.5910 .....What reports must I submit and when?

Paragraphs (a), (b), (b)(1) through (b)(5), (c), (c)(1) through (c)(5), (h), (i) and (g) of this section apply. Paragraphs (c)(6), (e), and (e)(1) through (e)(12) do not apply because the facility does not operate a continuous monitoring system. Paragraph (f) does not apply because 40 CFR 63.5805(a)(1) and (d).

40 CFR 63.5915 .....What records must I keep?

Paragraphs (a), (a)(1) through (3), (c), and (d) of this section apply. Paragraphs (b) of this section does not apply to the permittee because this requirement applies to facilities that operate an add-on control device, which the permittee does not. Paragraphs (e)(1) through (4) of this section do not apply because the facility does not have new or existing continuous lamination/ casting operations.

40 CFR 63.5920 .....In what form and how long must I keep my records?

Paragraphs (a) through (d) of this section apply.

40 CFR 63.5925 .....What parts of the General Provisions apply to me?

This section and Table 15 of Subpart WWWW, applies to this facility as specified.

40 CFR 63.5930 .....Who implements and enforces this subpart?

This section does not apply to the facility

40 CFR 63.5935 .....What definitions apply to this subpart?

The definitions of this section apply to the facility.

5.5 Permit Conditions Review

- Permit Condition 2.3 establishes the applicable compliance deadline, emission limitations, operating limitations and work practice standard of 40 CFR 63, Subpart.
- Permit Conditions 2.7 establishes the compliance demonstration requirements of 40 CFR 63, Subpart WWWW that assure compliance with Permit Condition 2.3. Specifically, Permit Condition 2.7 establishes the options for meeting the standards, established by Permit Condition 2.3, for open molding and centrifugal casting operations at new and existing sources. Permit Conditions 2.7 also establishes the general compliance, continuous compliance demonstration, and performance test or other initial compliance demonstration requirements necessary to demonstration compliance with Permit Condition 2.3. Permit Condition 2.7 also establishes the recordkeeping requirements for demonstrating compliance with Permit Condition 2.3
- Permit Condition 2.10 contains requirements for the notification and reporting requirements of the National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, 40 CFR 63, Subpart WWWW necessary to demonstrate compliance with Permit Condition 2.3.
- Permit Condition 2.4 establishes the PM_{10} emission limits for the dust collection cyclone. The emission list has been established in the permit because controlled PM_{10} emissions were used to demonstrate compliance with the PM_{10} ambient air quality standard. Permit Condition 2.8 establishes the operating requirements that assure that the dust collection cyclone demonstrates compliance with Permit Condition 2.4.
- Permit Condition 2.5 establishes the opacity limits for the facility. Permit Conditions 2.8 and 2.11 established the compliance demonstration and reporting requirements that will be used to demonstrate compliance with Permit Condition 2.5.
- Permit Condition 2.6 establishes the odor requirements for the facility. Permit Conditions 2.9 and 2.11 established the odor management plan and certification requirements that will be used to demonstrate compliance with Permit Condition 2.6.

6. PERMIT FEES

Table 6.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM_{10}	2.6	0	2.6
VOC	28.87	0	28.87
TAPS/HAPS	28.87	0	28.87
Total:	60.34	0	60.34
Fee Due	**$ 5,000.00**		

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

A draft copy was provided to the Coeur d'Alene Regional Office on March 6, 2006. No comments were received.

7.2 Public Comment

A public comment period shall be conducted in accordance with IDAPA 58.01.01.209.05.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommends that Spunstrand be issued proposed PTC No. P-060132 for the permitting action that involves the incorporation of 40 CFR 63, Subpart WWWW and establishment of the facility as a Tier I major source. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

ABC/sd Permit No. P-060132

G:\Air Quality\Stationary Source\Permitting Process\Facilities\Spunstrand.Wallace\P-060132\Public Comment\P 060132.PC.SB.doc

APPENDIX A

AIRS Information

P-060132

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

Facility Name: Spunstrand, Inc.
Facility Location: Wallace
AIRS Number: 079-00083

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO_2	B							U
NO_x	B							U
CO	B							U
PM_{10}	B							U
PT (Particulate)	B							U
VOC	B							U
THAP (Total HAPs)	A						A	
			APPLICABLE SUBPART					
				WWWW				

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

APPENDIX B

Emissions Inventory

P-060132

Table 2

EMISSION SUMMARY
Spunstrand, Inc.

Actual Operating Hours per Year 2496
Maximum Operating Hours per Year 8760

	Resin	Quantity (lb/yr)	% Styrene	Total Styrene (lb/yr)	Emission Factor lb Styrene/ ton Resin	Actual Styrene Emissions (lb/hr)	(tons/yr)	Potential Styrene Emissions (tons/yr)
0801	Styrene	800	100.0	800.0	318.24	0.051	0.0636	0.2234
AS197P	Hetron Polyester 197P	12,000	42.0	5040.0	111	0.267	0.3330	1.1687
AS620T20	Hetron FR 620T20	13,750	32.3	4441.3	77.52	0.214	0.2665	0.9352
AS700	Ashland Hetron	450	41.0	184.5	108	0.010	0.0122	0.0426
AS7334T15	Flex Iso	15,500	41.0	6355.0	108	0.335	0.4185	1.4688
AS922L	Hetron FR 922L	14,400	48.0	6912.0	133	0.384	0.4788	1.6804
AS922L25	Hetron Vinyl Ester	4,500	41.0	1845.0	108	0.097	0.1215	0.4264
AS99P	Hetron ISO FR 99P	29,150	36.0	10494.0	90	0.526	0.6559	2.3019
ASFR620T20	FR Hetron Resin	18,750	32.3	5862.5	77.52	0.282	0.3517	1.2345
ASFR992	Hetron VE 922	51,000	41.0	20910.0	108	1.103	1.3770	4.8327
ASQ6367	FR Hetron Resin 6367	2,750	41.0	1127.5	108	0.059	0.0743	0.2606
ASQ6490	Terephthalic Lam Res	126,520	44.6	56427.9	120.4	3.051	3.8083	13.3655
B-396P-IUU	Roberts Gray Iso Gel	142	28.0	39.8	67.2	0.002	0.0024	0.0084
510-C-350M VE	DX Derakane	19,436	35.0	6802.6	86	0.335	0.4179	1.4666
FV 742-2695	Iso Resin	45	41.9	18.9	110.7	0.001	0.0012	0.0044
DX 745-4635	Iso Resin	8,000	46.9	3752.0	128.6	0.206	0.2572	0.9027
411-45 4852	DX Derakane	904	45.0	406.8	122	0.022	0.0276	0.0968
510A-40	DX Derakane	8,619	37.5	3232.1	95	0.164	0.2047	0.7184
470-300M VE	DX Derakane	13,550	33.0	4471.5	79	0.214	0.2676	0.9392
	Total	**316,466**		**139123.3**		**7.324**	**9.140**	**32.077**
	Total on-site use (90%)	**284,819**		**125,210.93**		**6.591**	**8.226**	**28.869**

Styrene Emissions

Emission Unit	(lb/hr)	(tons/yr)
MAC 1	2.636	11.548
MAC 2	2.636	11.548
MAC 3	1.318	5.774
TOTAL	**6.591**	**28.869**

PM10 Emissions

Emission Unit	Emission Factor grains/dscf	Exhaust Flow dscf/min	Potential PM Emission Rate lb/hr	tons/yr
Dust Collection Cyclone	0.1	700.4	0.600	2.630

Material Balance

Material	lb/hr Used
Total Resin	114.11
Total Styrene Used	50.16
Total Styrene Emissions	6.591
Total Styrene in Product	43.57
Total Fiberglass Filament	139.47
Total Product	253.58
Total Dust	223.15
Total Waste	30.43